

10/582,406

(FILE 'HOME' ENTERED AT 17:33:56 ON 30 JUN 2007)

FILE 'REGISTRY' ENTERED AT 17:34:42 ON 30 JUN 2007  
L1 STRUCTURE uploaded

=> d 11  
L1 HAS NO ANSWERS  
L1 STR

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=> s 11  
SAMPLE SEARCH INITIATED 17:35:28 FILE 'REGISTRY'  
SAMPLE SCREEN SEARCH COMPLETED - 184 TO ITERATE

100.0% PROCESSED 184 ITERATIONS 6 ANSWERS  
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*  
BATCH \*\*COMPLETE\*\*  
PROJECTED ITERATIONS: 2867 TO 4493  
PROJECTED ANSWERS: 6 TO 266

L2 6 SEA SSS SAM L1

=> s 11 full  
FULL SEARCH INITIATED 17:35:33 FILE 'REGISTRY'  
FULL SCREEN SEARCH COMPLETED - 3640 TO ITERATE

100.0% PROCESSED 3640 ITERATIONS 60 ANSWERS  
SEARCH TIME: 00.00.01

L3 60 SEA SSS FUL L1

=> fil caplus  
COST IN U.S. DOLLARS SINCE FILE TOTAL  
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FULL ESTIMATED COST 172.55 172.76

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FILE COVERS 1907 - 30 Jun 2007 VOL 147 ISS 2  
FILE LAST UPDATED: 29 Jun 2007 (20070629/ED)

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=> s 13  
L4 19 L3

=> d 1-19 bib abs

L4 ANSWER 1 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2006:1174237 CAPLUS  
DN 145:471699  
TI Bidentate planar-chiral modular ferrocenyl phosphines, thiols and amines as ligands for transition metal catalyzed asymmetric reactions and process for preparation thereof  
IN Pugin, Benoit; Feng, Xiangdong  
PA Solvias A.-G., Switz.  
SO PCT Int. Appl., 59pp.  
CODEN: PIXXD2  
DT Patent  
LA German  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2006117369	A1	20061109	WO 2006-EP61973	20060502
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				

PRAI CH 2005-776 A 20050503

OS MARPAT 145:471699

AB Ferrocenes [( $\eta$ 5-1-R-2-Y-3-X1-4-X2-C5H)Fe( $\eta$ 5-C5H5-nR1n)] [1, n = 0-5, R1 = C1-4 alkyl, C6-10 aryl, C7-12 (alk)aralkyl, preferably n = 0; R = H, halo, silyl, optionally alkylthio-, alkoxy-, aryloxy-, silyl-substituted C1-20 organyl, preferably R = C1-4 alkyl(thio) C1-4 alkoxy, PhO, Me3Si; Y = C-bound chiral directing group containing vinyl, Me, Et, alkoxyethyl, siloxymethyl aminomethyl groups, preferably Y = 1-methoxyethyl, 1-dimethylaminoethyl, (dimethylamino)phenylmethyl, 2-oxazolinyl, 1,3-dioxan-2-yl; X1, X2 = optionally chiral phosphino, P-heterocyclyl, SH, organylthio, preferably X1 ≠ X2], useful as ligands for transition metal-catalyzed asym. reactions, preferably for asym. hydrogenation, were prepared by a process comprising lithiation of trisubstituted ferrocenes [( $\eta$ 5-1-R-2-Y-3-Z-C5H2)Fe( $\eta$ 5-C5H5-nR1n)] (2, Z = halo, same R, R1, Y) by lithium or magnesium secondary amides to [( $\eta$ 5-1-R-2-Y-3-Z-4-MC5H)Fe( $\eta$ 5-C5H5-nR1n)] (3, M = Li, halomagnesium) followed by introduction of X2 by reaction with X2Z1 (Z1 = halo) to give [( $\eta$ 5-1-R-2-Y-3-Z-4-X2C5H)Fe( $\eta$ 5-C5H5-nR1n)] (4, same R, Y, X, Z) with subsequent metalation by alkyllithium or Grignard reagents and analogous introduction of X1. In an example, (2S)-1-(dicyclohexylphosphino)-2-diphenylphosphino-3-[(1R)-1-(dimethylaminoethyl)]ferrocene (B1) was prepared by reaction of (1R)-1-bromo-2-[(1R)-1-(dimethylaminoethyl)]ferrocene with lithium 2,2,6,6-tetramethylpiperide and Cy2PCl, followed by BuLi lithiation of the resulting compound 2 [R = H, Y = (R)-CHMe(NMe2), Z = Br, X2 = PCy2] and reaction with Ph2PCl. In another example, the prepared compound B1 was used as ligand in rhodium-catalyzed asym. hydrogenation of di-Me itaconate, affording di-Me (R)-methylsuccinate with 100% conversion and 95% ee.

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

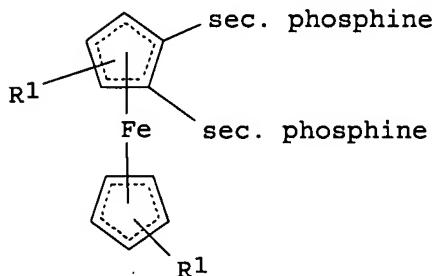
L4 ANSWER 2 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2006:26824 CAPLUS  
DN 144:274387  
TI General Route to Dissymmetric Heteroannular-Functionalized Ferrocenyl 1,2-Diphosphines: Selective Synthesis and Characterization of a New Class of Tri- and Tetrasubstituted Ferrocenyl Compounds  
AU Ivanov, V. V.; Hierso, J.-C.; Amardeil, R.; Meunier, P.  
CS Laboratoire de Synthese et Electrosynthese Organometalliques associe au CNRS (UMR 5188), Faculte des sciences Mirande, Universite de Bourgogne, Dijon, 21078, Fr.  
SO Organometallics (2006), 25(4), 989-995  
CODEN: ORGND7; ISSN: 0276-7333  
PB American Chemical Society  
DT Journal  
LA English  
OS CASREACT 144:274387  
AB Several monosubstituted-cyclopentadienyl anions (A-Li) and [1,2-bis(diphenylphosphino)-4-tert-butylcyclopentadienyl]lithium (B-Li) react with FeCl<sub>2</sub> to afford a novel class of multidentate ferrocenylphosphines (A-Fe-B). The proposed synthetic method represents a unique means to produce achiral dissym. 1,1',2-substituted ferrocenes (A-Fe-B) bearing a heteroannular 1'-substituent which is different from the homoannular 1- and 2-substituents. The selectivity for the two-step reaction favors formation of the desired dissym. product (A-Fe-B) rather than the concurrent formation of the sym. di- and tetrasubstituted ferrocenes (A-Fe-A and B-Fe-B). Therefore, this method allows access to a great number of dissym. multidentate metalloligands, especially when one considers that functionalized-Cp salts continue to expand in terms of number and diversity. Herein, emphasis was placed upon the <sup>1</sup>H, <sup>13</sup>C, and <sup>31</sup>P NMR characterization of the metalloligands; several examples exhibit intriguing conformational properties and rare "through-space" phosphorus nuclear-spin couplings.

RE.CNT 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 3 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2005:547608 CAPLUS  
DN 143:78304  
TI Preparation of ferrocenyl-1,2-diphosphines and their metal complexes as catalysts for asymmetric synthesis  
IN Lotz, Matthias; Kesselgruber, Martin; Thommen, Marc; Pugin, Benoit  
PA Solvias A.-G., Switz.  
SO PCT Int. Appl., 65 pp.  
CODEN: PIXXD2  
DT Patent  
LA German  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 2005056568	A1	20050623	WO 2004-EP53389	20041210	
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,				

MR, NE, SN, TD, TG  
 CA 2548928 A1 20050623 CA 2004-2548928 20041210  
 EP 1692151 A1 20060823 EP 2004-820078 20041210  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS  
 CN 1894268 A 20070110 CN 2004-80037022 20041210  
 JP 2007516971 T 20070628 JP 2006-543552 20041210  
 US 2007142655 A1 20070621 US 2006-582406 20060609  
 PRAI CH 2003-2131 A 20031212  
 WO 2004-EP53389 W 20041210  
 OS CASREACT 143:78304; MARPAT 143:78304  
 GI



I

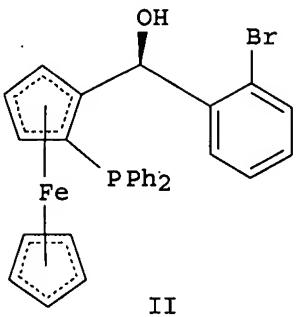
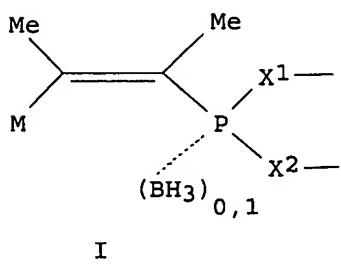
AB The invention relates to preparation of compds., I (R1 = H, C1-4 alkyl, and at least one sec. phosphine depicts an unsubstituted or substituted cyclic phosphine group, or phosphonium salts thereof having one or two monovalent anions or a divalent anion), provided in the form of racemic compds., mixts. of diastereomers or essentially pure diastereomers. I can be obtained by a novel method and are valuable ligands for catalytically active metal complexes in asym. synthesis.

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 4 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 2005:547607 CAPLUS  
 DN 143:78303  
 TI Method for producing ortho-metallated and ortho-substituted aromatic compounds  
 IN Pfaltz, Andreas; Lotz, Matthias; Schoenleber, Marc; Pugin, Benoit;  
 Kesselgruber, Martin; Thommen, Marc  
 PA Solvias A.-G., Switz.  
 SO PCT Int. Appl., 98 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA German  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005056566	A2	20050623	WO 2004-EP53388	20041210
	WO 2005056566	A3	20051201		
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
	RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,			

EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT,  
 RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,  
 MR, NE, SN, TD, TG  
 CA 2548925 A1 20050623 CA 2004-2548925 20041210  
 EP 1692149 A2 20060823 EP 2004-820077 20041210  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS  
 CN 1890253 A 20070103 CN 2004-80036675 20041210  
 JP 2007513923 T 20070531 JP 2006-543551 20041210  
 US 2007149796 A1 20070628 US 2006-582404 20060609  
 PRAI CH 2003-2134 A 20031212  
 WO 2004-EP53388 W 20041210  
 OS CASREACT 143:78303; MARPAT 143:78303  
 GI



**AB** The invention relates to compds. having a structural element I in an aromatic hydrocarbon ring, wherein: M = Li, MgX<sub>3</sub>, (C<sub>1-18</sub> alkyl)<sub>3</sub>Sn, ZnX<sub>3</sub>, B(OC<sub>1-4</sub> alkyl)<sub>2</sub>; X<sub>1</sub>, X<sub>2</sub> = independent of one another, represent O, N, C-bound hydrocarbon radicals, heterohydrocarbon radicals are bound to the free bonds of the O and N atoms; group C:C, together with C atoms, forms a hydrocarbon aromatic compound and represents X<sub>3</sub> Cl, Br, I. The inventive compds. are easily obtained by directly substituting the hydrogen in the ortho position to the P atom with metalation reagents. The metal atoms can then be substituted by a reactive electrophilic compound. The group P(X<sub>1</sub>)(X<sub>2</sub>)---(BH<sub>3</sub>)<sub>0.1</sub> can then be converted into a secondary phosphine group. The inventive method enables the production of monophosphines and diphosphines even on a large scale(coating), which are valuable ligands for metal complexes serving as catalysts for, e.g. enantioselective hydrogenations. Thus, preparation of title compound is described in several steps starting from ferrocene.

**L4** ANSWER 5 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN  
**AN** 2004:848402 CAPLUS

**DN** 142:6632

**TI** Synthesizing multidentate ferrocenylphosphines: A powerful route to dissymmetrically tri-substituted ferrocenes. X-ray structure and <sup>13</sup>C NMR of a diaryl-alkyl-phosphino ferrocene

**AU** Hierso, Jean-Cyrille; Ivanov, Vladimir V.; Amardeil, Regine; Richard, Philippe; Meunier, Philippe

**CS** LSEO UMR-CNRS 5188, Universite de Bourgogne, Dijon, F-21078, Fr.

**SO** Chemistry Letters (2004), 33(10), 1296-1297

**CODEN:** CMLTAG; **ISSN:** 0366-7022

**PB** Chemical Society of Japan

**DT** Journal

**LA** English

**OS** CASREACT 142:6632

**AB** As a powerful route to multidentate ferrocenylphosphines, the synthetic strategy which consists in successively reacting FeCl<sub>2</sub> with the suitably substituted cyclopentadienyllithium salts was carried out. The new mixed

diaryl/alkyl triphosphine 1,2-bis(diphenylphosphino)-1'-(diisopropylphosphino)-4-tert-butylferrocene was obtained in good yield (70%). A very rare through-space nuclear spin-spin coupling  $J_{CP} = 5.5$  Hz was evidenced from its reported  $^{13}\text{C}$  NMR and x-ray mol. structure characterizations.

RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 6 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2004:704772 CAPLUS  
DN 141:349854  
TI Catalytic efficiency of a new tridentate ferrocenyl phosphine auxiliary: Sonogashira cross-coupling reactions of alkynes with aryl bromides and chlorides at low catalyst loadings of 10-1 to 10-4 Mol %  
AU Hierso, Jean-Cyrille; Fihri, Aziz; Amardeil, Regine; Meunier, Philippe; Doucet, Henri; Santelli, Maurice; Ivanov, Vladimir V.  
CS Laboratoire de Synthese et d'Electrosynthese Organometalliques UMR-CNRS 5188, Universite de Bourgogne, Dijon, 21078, Fr.  
SO Organic Letters (2004), 6(20), 3473-3476  
CODEN: ORLEF7; ISSN: 1523-7060  
PB American Chemical Society  
DT Journal  
LA English  
OS CASREACT 141:349854  
AB The catalytic activity in Sonogashira cross-coupling reaction of alkynes with a variety of aryl halides (including chlorides) using a multidentate ferrocenyl phosphine is presented. The mixed ferrocenyl aryl/alkyl triphosphine was thermally stable and insensitive to air or moisture, and its robustness allowed aryl alkynylation at very low catalyst loadings with TONs up to 250 000. Copper-free coupling using phenylacetylene was also accessible in good yield.

RE.CNT 48 THERE ARE 48 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 7 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2004:643845 CAPLUS  
DN 141:342395  
TI "Through-Space" Nuclear Spin-Spin JPP Coupling in Tetraphosphine Ferrocenyl Derivatives: A  $^{31}\text{P}$  NMR and X-ray Structure Correlation Study for Coordination Complexes  
AU Hierso, Jean-Cyrille; Fihri, Aziz; Ivanov, Vladimir V.; Hanquet, Bernard; Pirio, Nadine; Donnadieu, Bruno; Rebiere, Bertrand; Amardeil, Regine; Meunier, Philippe  
CS Laboratoire de Synthese et d'Electrosynthese Organometalliques UMR-CNRS 5188, Facultes des Sciences Mirande, Universite de Bourgogne, Dijon, F-21078, Fr.  
SO Journal of the American Chemical Society (2004), 126(35), 11077-11087  
CODEN: JACSAT; ISSN: 0002-7863  
PB American Chemical Society  
DT Journal  
LA English  
OS CASREACT 141:342395  
AB Herein, the authors report on  $^{31}\text{P}$  $^{31}\text{P}$  solution-phase through-space nuclear spin-spin coupling consts. (JPP) from tetraphosphine complexes  $[(\text{MX}_2)_n\text{L}]$  ( $\text{M} = \text{Ni}, \text{Pd}; \text{X} = \text{Cl}, \text{Br}; n = 1, 2; \text{L} = 1,1',2,2'$ -tetraakis(diphenylphosphino)-4,4'-di-tert-butylferrocene). These JPP consts. were accurately determined through NMR iterative simulation based on the 2nd-order spectra obtained for the compds. The corresponding solid-state x-ray structures of the complexes were determined, and the through-space P...P distances are reported. Due to the blocked conformation of the species in solution, a qual. and semiquant. exptl. correlation was obtained, which links the geometric parameters and the intensity of the corresponding P...P coupling constant. The lone-pair overlap theory developed for  $^{19}\text{F}$  $^{19}\text{F}$  and  $^{15}\text{N}$  $^{19}\text{F}$

through-space couplings in organic compds. [J. Am. Chemical Society 1973, 95, 7747-7752; 2000, 122, 4108-4116] appears to be a reliable foundation on which to account for the authors' results. Based on the reported observations, the lone-pair overlap model is extended to through-space 31P31P coupling, and the model is broadened to encompass metal orbital contributions for coordination complexes. Some of the predictions and consequences of the proposed theory are discussed.

RE.CNT 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 8 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2003:753472 CAPLUS  
DN 139:381594  
TI A Palladium-Ferrocenyl Tetraphosphine System as Catalyst for Suzuki Cross-Coupling and Heck Vinylation of Aryl Halides: Dynamic Behavior of the Palladium/Phosphine Species  
AU Hierso, Jean-Cyrille; Fihri, Aziz; Amardeil, Regine; Meunier, Philippe; Doucet, Henri; Santelli, Maurice; Donnadieu, Bruno  
CS Laboratoire de Synthese et d'Electrosynthese Organometalliques Associe au CNRS, Universite de Bourgogne, Dijon, 21000, Fr.  
SO Organometallics (2003), 22(22), 4490-4499  
CODEN: ORGND7; ISSN: 0276-7333  
PB American Chemical Society  
DT Journal  
LA English  
OS CASREACT 139:381594  
AB The system combining the new ferrocenyl tetraphosphine 1,1',2,2'-tetrakis(diphenylphosphino)-4,4'-di-tert-butylferrocene (called Fc(P)4tBu, 1) and [PdCl<sub>2</sub>(η<sub>3</sub>-C<sub>3</sub>H<sub>5</sub>)]<sub>2</sub> is an active catalyst for the cross-coupling of aryl halides with aryl boronic acids (i.e., Suzuki reaction) and for the vinylation of aryl halides with alkenes (Heck reaction). A variety of chlorides reacts in good yield with aryl boronic acids in the presence of 1-0.01% catalyst. The more reactive aryl bromides were reacted with aryl boronic acids or alkenes in the presence of 0.01-0.0001% catalyst. This system compares well with other catalytic systems that were described for Suzuki or Heck reactions. <sup>1</sup>H, <sup>13</sup>C, and <sup>31</sup>P NMR studies in solution were conducted with the view to obtain a better understanding of the interaction involving the Pd dimeric precursor and the tetraphosphine. The initial formation of kinetic and then different thermodn. species was evidenced. A dynamic evolution from labile Pd(π-allyl)/tetraphosphine species toward the well-defined, stable, and nonfluxional complexes [PdCl<sub>2</sub>{Fc(P)4tBu}] (3) and [Pd<sub>2</sub>C<sub>14</sub>{Fc(P)4tBu}] (4) is observed. This behavior is different from the other known active tetraphosphine Tedicyc [cis,cis,cis-1,2,3,4-tetrakis(diphenylphosphinomethyl)cyclopentane]. The Pd mononuclear 3 and dinuclear 4 complexes were isolated and fully characterized in the solid state by x-ray diffraction anal. and in solution by multinuclear NMR. The blocked conformation in solution of compds. 1, 3, and 4 resp. leads to original AA'BB', ABMX, and A<sub>2</sub>B<sub>2</sub> 31P NMR spin-systems for the four P atoms.

RE.CNT 63 THERE ARE 63 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 9 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2002:400175 CAPLUS  
DN 137:256776  
TI Different coordination modes of a 1,1',2,2'-ferrocenyltetraphosphine: bi- and tri-dentate behaviour with group 6 and 7 transition metals  
AU Andre-Bentabet, Emmanuelle; Broussier, Roland; Amardeil, Regine; Hierso, Jean-Cyrille; Richard, Philippe; Fasseur, Dominique; Gautheron, Bernard; Meunier, Philippe  
CS Laboratoire de Synthese et d'Electrosynthese Organometalliques (UMR 5632), Universite de Bourgogne, Dijon, 21000, Fr.  
SO Journal of the Chemical Society, Dalton Transactions (2002), (11),

2322-2327

CODEN: JCSDAA; ISSN: 1472-7773

PB Royal Society of Chemistry

DT Journal

LA English

OS CASREACT 137:256776

AB The behavior of 1,1',2,2'-tetrakis(diphenylphosphino)-4,4'-di(tert-butyl)ferrocene (1), acting as a homoannular or heteroannular ligand, was studied. Due to the cisoid disposition of the phosphino groups of each ring, different coordination modes are observed. With Group 6 metal carbonyls, M(CO)<sub>6</sub>, the tetraphosphine acts exclusively as a tridentate ligand. In contrast, the reaction with MnCp(CO)<sub>3</sub> leads to complexes showing 1,1' and 1,2 bidentate coordination modes. All these complexes were characterized by <sup>1</sup>H and <sup>31</sup>P NMR spectroscopy. The mol. structures of the Mo complex [(1)Mo(CO)<sub>3</sub>] (2b) and the 1,1' Mn complex [(1)MnCp(CO)] (3) were established by x-ray diffraction.

RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 10 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2001:878952 CAPLUS

DN 136:247674

TI 1,1',2,2'-Tetrakis(diphenylphosphino)-4,4'-di-tert-butylferrocene, a new cisoid arrangement of phosphino groups

AU Broussier, Roland; Bentabet, Emmanuelle; Amardeil, Regine; Richard, Philippe; Meunier, Philippe; Kalck, Philippe; Gautheron, Bernard

CS Laboratoire de Synthese et d'Electrosynthese Organometalliques (UMR 5632), Universite de Bourgogne, Dijon, 21000, Fr.

SO Journal of Organometallic Chemistry (2001), 637-639, 126-133  
CODEN: JORCAI; ISSN: 0022-328X

PB Elsevier Science S.A.

DT Journal

LA English

OS CASREACT 136:247674

AB The action of two equivalent of 1,2-bis(diphenylphosphino)-4-tert-butylcyclopentadienyllithium on FeCl<sub>2</sub> led to the corresponding 1,1',2,2'-tetraphosphinoferrocene. The x-ray structure of this bulky ferrocene is described. The spectroscopic results reveal a conformational chirality with a cisoid disposition of the phosphino groups. The first results about the complexation with representative elements of Group IX and X (Rh, Pd, Ir) are reported.

RE.CNT 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 11 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2000:895722 CAPLUS

DN 134:193552

TI Rhodium and palladium complexes from 1,1' and 1,2 ferrocenylphosphine as bidentate ligands. Versatile coordination

AU Broussier, R.; Bentabet, E.; Laly, M.; Richard, P.; Kuz'mina, L. G.; Serp, P.; Wheatley, N.; Kalck, P.; Gautheron, B.

CS Laboratoire de Synthese et d'Electrosynthese Organometalliques (UMR 5632), Universite de Bourgogne, Dijon, 21000, Fr.

SO Journal of Organometallic Chemistry (2000), 613(1), 77-85  
CODEN: JORCAI; ISSN: 0022-328X

PB Elsevier Science S.A.

DT Journal

LA English

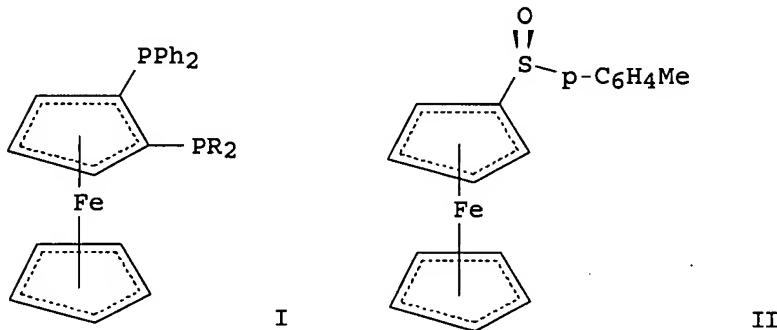
OS CASREACT 134:193552

AB The complexation of the mixed bidentate ligands 1-diphenylphosphino-1'-diphenylthiophosphinoferrocenyl and 1,2-bis(diphenylphosphino)ferrocenyl with rhodium(I) and palladium(II) species yield a range of mono- and dirhodium or palladium complexes. Their interest as possible catalysts for alkene hydroformylation and alkoxy carbonylation and Heck coupling

reactions has been assessed. Fe[C<sub>5</sub>Me<sub>4</sub>P(S)Ph<sub>2</sub>] [C<sub>5</sub>Me<sub>4</sub>PPh<sub>2</sub>]PdCl<sub>2</sub> and Fe[C<sub>5</sub>H<sub>2</sub>-1,2-(PPh<sub>2</sub>)<sub>2</sub>-4-tBu] [C<sub>5</sub>H<sub>5</sub>]PdCl<sub>2</sub> have been characterized by single-crystal x-ray diffraction studies.

RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 12 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2000:609613 CAPLUS  
DN 133:335302  
TI A new class of ferrocene-based 1,2-bis(phosphanes) possessing only planar chirality  
AU Argouarch, Gilles; Samuel, Odile; Riant, Olivier; Daran, Jean-Claude; Kagan, Henri B.  
CS Institut de Chimie Moleculaire d'Orsay, Universite Paris-Sud, Orsay, 91405, Fr.  
SO European Journal of Organic Chemistry (2000), (16), 2893-2899  
CODEN: EJOCFK; ISSN: 1434-193X  
PB Wiley-VCH Verlag GmbH  
DT Journal  
LA English  
OS CASREACT 133:335302  
GI



AB Chiral 1,2-bis(phosphines) (I; R = cyclohexyl (13a), Me (13b)), devoid of individual chiral centers, were prepared in three steps from chiral sulfoxide 10 (shown as II). Their corresponding Rh complexes were used as catalysts for asym. hydrogenation, giving high ee values (< 95%) in the reduction of itaconic acid or its ester. A cationic Rh complex involving coordination of two mols. of 13b and one mol. of oxygen was isolated and its crystal structure established.

RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 13 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2000:200733 CAPLUS  
DN 133:17610  
TI New 1,1'- or 1,2- or 1,3-bis(diphenylphosphino)ferrocenes  
AU Broussier, R.; Bentabet, E.; Mellet, P.; Blacque, O.; Boyer, P.; Kubicki, M. M.; Gautheron, B.  
CS Laboratoire de Synthese et d'Electrosynthese Organometalliques (UMR 5632), Universite de Bourgogne, Dijon, F-21000, Fr.  
SO Journal of Organometallic Chemistry (2000), 598(2), 365-373  
CODEN: JORCAI; ISSN: 0022-328X  
PB Elsevier Science S.A.  
DT Journal  
LA English  
AB The syntheses of ferrocenyl phosphines with bulky substituents are

reported using the reaction between FeCl<sub>2</sub> and the suitably substituted cyclopentadienyl salts, LiC<sub>5</sub>H<sub>3</sub>-1,3-(PPh<sub>2</sub>)<sub>2</sub>, LiC<sub>5</sub>H<sub>3</sub>-1-PPh<sub>2</sub>-3-tBu, and LiC<sub>5</sub>H<sub>2</sub>-1,2-(PPh<sub>2</sub>)<sub>2</sub>-4-tBu. This strategy leads to bi-, tri- and tetraphosphines, which cannot be obtained by the other access paths used to prepare substituted ferrocenes. [C<sub>5</sub>H<sub>3</sub>-1,3-(PPh<sub>2</sub>)<sub>2</sub>] (C<sub>5</sub>H<sub>5</sub>)Fe, [C<sub>5</sub>H<sub>3</sub>-1-PPh<sub>2</sub>-3-tBu]<sub>2</sub>Fe racemic and meso and [C<sub>5</sub>H<sub>2</sub>-1,2-(PPh<sub>2</sub>)<sub>2</sub>-4-tBu] (C<sub>5</sub>H<sub>5</sub>)Fe were characterized by single-crystal x-ray diffraction studies.

RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 14 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2000:53800 CAPLUS  
DN 132:194457  
TI 1,3-Bisdiphenylphosphinoferrocenes: the unexpected 2,5-dilithiation of dibromoferrocene towards a new area of ferrocene-ligand chemistry  
AU Butler, I. R.; Drew, M. G. B.; Greenwell, C. H.; Lewis, E.; Plath, M.; Mussig, S.; Szewczyk, J.  
CS Chemistry Department, The University of Wales, Bangor, UK  
SO Inorganic Chemistry Communications (1999), 2(12), 576-580  
CODEN: ICCOFP; ISSN: 1387-7003  
PB Elsevier Science S.A.  
DT Journal  
LA English  
OS CASREACT 132:194457  
AB The synthesis and characterization of 1,3-bis(diphenylphosphino)ferrocene is described for the 1st time. The ligand was obtained as a byproduct of the ortho-lithiation of 1,1'-dibromoferrocene, as a consequence of the dilithiation of one of the cyclopentadienyl rings. The intermediate compound 1,1'-dibromo-2,5-bis(diphenylphosphino)ferrocene, which is the precursor compound to the new ligand, was structurally characterized. Further reaction of 1,1'-dibromo-2,5-bis(diphenylphosphino)ferrocene with BuLi followed by quenching with chlorodiphenylphosphine affords the new 1,2,3,1'-tetrakis(diphenylphosphino)ferrocene, while the similar reaction of 1,1'-dibromo-2,2'-bis(diphenylphosphino)ferrocene gives 1,1',2,2'-tetrakis(diphenylphosphino)ferrocene.

RE.CNT 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 15 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 1999:728760 CAPLUS  
DN 132:35868  
TI A remarkably simple route to tri-substituted ferrocenes: the ortho-lithiation of 1,1'-dibromoferrocene and bromoferrocene  
AU Butler, Ian R.; Mussig, Stefan; Plath, Matthias  
CS Department of Chemistry, University of Wales, Gwynedd, LL57 2UW, UK  
SO Inorganic Chemistry Communications (1999), 2(9), 424-427  
CODEN: ICCOFP; ISSN: 1387-7003  
PB Elsevier Science S.A.  
DT Journal  
LA English  
AB The ortho-lithiation of 1,1'-dibromoferrocene is reported for the 1st time. The reaction is carried out using LDA at low temperature in THF to avoid metathesis. A number of electrophilic quenching reagents were used, giving substituted 1,1'-dibromoferrocenes: [(\eta<sub>5</sub>-C<sub>5</sub>H<sub>4</sub>Br)Fe(\eta<sub>5</sub>-C<sub>5</sub>H<sub>3</sub>(Br)(R)-1,2)], R = -PPh<sub>2</sub>, -SCH<sub>3</sub>, -P(iPr)<sub>2</sub>, -CHO, -CO<sub>2</sub>H, -S(O)p-tol. The further derivation of one of these compds., R = -PPh<sub>2</sub>, was carried out, again using a lithiation and quench sequence, to demonstrate the versatility of these product compds. as precursors in their own right. In this manner a range of tri-substituted ferrocenes [(\eta<sub>5</sub>-C<sub>5</sub>H<sub>4</sub>R)Fe(\eta<sub>5</sub>-C<sub>5</sub>H<sub>3</sub>(R)PPh<sub>2</sub>-1,2)], R = -PPh<sub>2</sub>, -SCH<sub>3</sub>, -P(iPr)<sub>2</sub>, -CHO, -CO<sub>2</sub>H, were prepared. The ortho-lithiation of bromoferrocene was similarly achieved and thus this also provides a simple and effective new route to 1,2-disubstituted ferrocenes.

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 16 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 1998:486061 CAPLUS  
DN 129:189457  
TI Ferrocenic polyphosphines and polythioethers: synthesis, reactivity and structure  
AU Broussier, Roland; Ninoreille, Serge; Bourdon, Cyrille; Blacque, Olivier;  
Ninoreille, Corinne; Kubicki, Marek M.; Gautheron, Bernard  
CS Laboratoire de Synthese et d'Electrosynthese Organometalliques, CNRS, UMR,  
Dijon, 21004, Fr.  
SO Journal of Organometallic Chemistry (1998), 561(1-2), 85-96  
CODEN: JORCAI; ISSN: 0022-328X  
PB Elsevier Science S.A.  
DT Journal  
LA English  
OS CASREACT 129:189457  
AB The new ferrocenic polyphosphines [C<sub>5</sub>Me<sub>3</sub>-1,2-(PPh<sub>2</sub>)<sub>2</sub>] (C<sub>5</sub>H<sub>5</sub>)Fe 2,  
[C<sub>5</sub>Me<sub>3</sub>-1,2-(PPh<sub>2</sub>)<sub>2</sub>]<sub>2</sub>Fe 3, [C<sub>5</sub>Me<sub>3</sub>-1,2-(PPh<sub>2</sub>)<sub>2</sub>][C<sub>5</sub>Me<sub>4</sub>(PPh<sub>2</sub>)]Fe 4 and  
polythioethers [C<sub>5</sub>Me<sub>3</sub>-1,2-(SCH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>)<sub>2</sub>]<sub>2</sub>Fe 6 and [C<sub>5</sub>Me<sub>3</sub>-1,2-  
(SCH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>)<sub>2</sub>] (C<sub>5</sub>H<sub>5</sub>)Fe 7 were prepared. The x-ray crystal structures of 3  
and 6 were determined. Some aspects of the reactivity of compds. 2, 3 and 4 are  
reported [P(III)→P(V) transformation, chelating properties] as well  
as the x-ray structure of [C<sub>5</sub>Me<sub>3</sub>-1,2-(PPh<sub>2</sub>)<sub>2</sub>W(CO)<sub>4</sub>] (C<sub>5</sub>H<sub>5</sub>)Fe 15.

RE.CNT 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

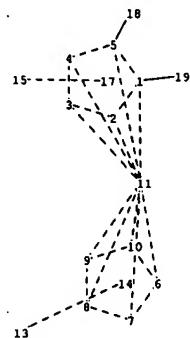
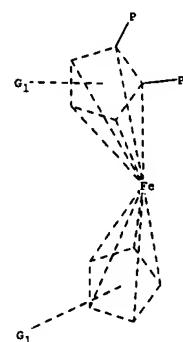
L4 ANSWER 17 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 1998:275343 CAPLUS  
DN 128:294871  
TI A Straightforward Asymmetric Synthesis of Enantiopure 1,2-Disubstituted Ferrocenes  
AU Riant, Olivier; Argouarch, Gilles; Guillaneux, Denis; Samuel, Odile;  
Kagan, Henri B.  
CS Laboratoire des Reactions Organiques Selectives Institut de Chimie  
Moleculaire d'Orsay, Universite Paris-Sud, Orsay, 91405, Fr.  
SO Journal of Organic Chemistry (1998), 63(10), 3511-3514  
CODEN: JOCEAH; ISSN: 0022-3263  
PB American Chemical Society  
DT Journal  
LA English  
OS CASREACT 128:294871  
AB Various types of 1,2-disubstituted chiral ferrocenes (ee ≥ 98%)  
were prepared conveniently in two steps from ferrocenyl p-tolyl sulfoxide 2  
(itself obtained by Andersen method between monolithioferrocene and  
menthyl p-tolylsulfinate). The process involves an highly  
diastereoselective ortholithiation of 2 followed by an electrophilic  
quenching. In a subsequent step t-BuLi attacks the substituted sulfoxide  
at sulfur, generating a new metalated species which is trapped by a second  
electrophile.

RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 18 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 1994:44443 CAPLUS  
DN 120:44443  
TI Multidentate ferrocenylphosphines. I. Tris(diphenylphosphino)ferrocenes  
AU Butler, Ian R.; Hobson, Lois J.; Macan, Stephan M. E.; Williams, Denis J.  
CS Dep. Chem., Univ. Wales, Bangor/Gwynedd, LL57 2UW, UK  
SO Polyhedron (1993), 12(15), 1901-5  
CODEN: PLYHDE; ISSN: 0277-5387  
DT Journal  
LA English

AB New potentially tridentate ferrocenylphosphines were prepared by the lithiation of diphenylphosphinoferrocene (dppf) followed by reaction of the dilithiated products with chlorodiphenylphosphine. The reaction of the new ligands with Pd(COD)Cl<sub>2</sub> was studied using <sup>31</sup>P NMR to determine the preferential bidentate coordination modes.

L4 ANSWER 19 OF 19 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 1986:626916 CAPLUS  
DN 105:226916  
TI Lithiophosphinoferrocenes. A route to polyphosphines and ring-substituted ferrocenophanes  
AU Butler, Ian R.; Cullen, William R.  
CS Chem. Dep., Univ. British Columbia, Vancouver, BC, V6T 1Y6, Can.  
SO Organometallics (1986), 5(12), 2537-42  
CODEN: ORGND7; ISSN: 0276-7333  
DT Journal  
LA English  
OS CASREACT 105:226916  
GI For diagram(s), see printed CA Issue.  
AB Lithiation of (diphenylphosphino)ferrocene by BuLi gave the dilithiated (one lithio group on each ring) product, which was treated with S<sub>8</sub> to give the [3]ferrocenophanes I and II. Treating the dilithiated product with ClPPh<sub>3</sub> gave tris(tertiary phosphines). Similar reaction with Cl<sub>2</sub>PPh gave [1]ferrocenophanes, e.g., III. Treating III with organolithium reagents gave anions in the PPh<sub>2</sub>-substituted ring. Some As analogs were also studied.



chain nodes :

13 15 18 19

ring nodes :

1 2 3 4 5 6 7 8 9 10 11

chain bonds :

1-19 5-18

ring bonds :

1-2 1-5 1-11 2-3 2-11 3-4 3-11 4-5 4-11 5-11 6-7 6-10 6-11 7-8 7-11 8-9 8-11 9-10  
9-11 10-11

exact/norm bonds :

1-2 1-5 1-11 2-3 2-11 3-4 3-11 4-5 4-11 5-11 6-7 6-10 6-11 7-8 7-11 8-9 8-11 9-10  
9-11 10-11

exact bonds :

1-19 5-18

G1:H,CH3,Et,n-Pr,i-Pr,n-Bu,i-Bu,s-Bu,t-Bu

Connectivity :

18:1 M minimum RC ring/chai19:1 M minimum RC ring/chain

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:CLASS6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom 13:CLASS  
14:CLASS15:CLASS17:CLASS18:CLASS19:CLASS

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FILE 'REGISTRY' ENTERED AT 18:38:54 ON 30 JUN 2007  
L1 STRUCTURE uploaded

=> d l1  
L1 HAS NO ANSWERS  
L1 STR

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

Structure attributes must be viewed using STN Express query preparation.

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SAMPLE SCREEN SEARCH COMPLETED - 184 TO ITERATE

100.0% PROCESSED 184 ITERATIONS 1 ANSWERS  
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FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*  
BATCH \*\*COMPLETE\*\*  
PROJECTED ITERATIONS: 2867 TO 4493  
PROJECTED ANSWERS: 1 TO 80

L2 1 SEA SSS SAM L1

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FULL SCREEN SEARCH COMPLETED - 3640 TO ITERATE

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SEARCH TIME: 00.00.01

L3 2 SEA SSS FUL L1

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ENTRY SESSION  
FULL ESTIMATED COST 172.55 172.76

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FILE LAST UPDATED: 29 Jun 2007 (20070629/ED)

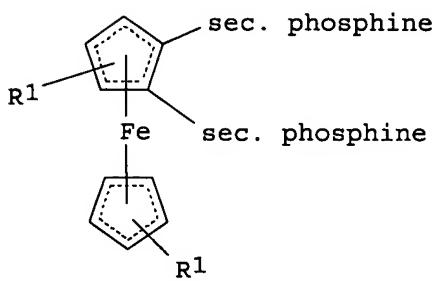
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They are available for your review at:

=> s 13  
L4 1 L3

=> d bib abs

L4 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 2005:547608 CAPLUS  
 DN 143:78304  
 TI Preparation of ferrocenyl-1,2-diphosphines and their metal complexes as catalysts for asymmetric synthesis  
 IN Lotz, Matthias; Kesselgruber, Martin; Thommen, Marc; Pugin, Benoit  
 PA Solvias A.-G., Switz.  
 SO PCT Int. Appl., 65 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA German  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005056568	A1	20050623	WO 2004-EP53389	20041210
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	EP 1692151	A1	20060823	EP 2004-820078	20041210
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS				
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	JP 2007516971	T	20070628	JP 2006-543552	20041210
	US 2007142655	A1	20070621	US 2006-582406	20060609
PRAI	CH 2003-2131	A	20031212		
	WO 2004-EP53389	W	20041210		
OS	CASREACT 143:78304; MARPAT 143:78304				
GI					

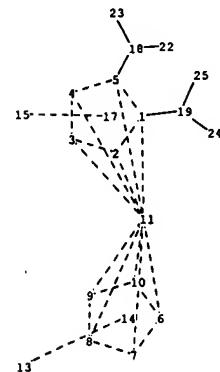
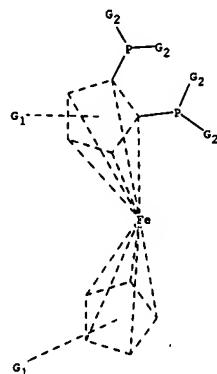


I

AB The invention relates to preparation of compds., I (R<sup>1</sup> = H, C<sub>1-4</sub> alkyl, and at least one sec. phosphine depicts an unsubstituted or substituted cyclic

phosphine group, or phosphonium salts thereof having one or two monovalent anions or a divalent anion), provided in the form of racemic compds., mixts. of diastereomers or essentially pure diastereomers. I can be obtained by a novel method and are valuable ligands for catalytically active metal complexes in asym. synthesis.

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT



chain nodes :

13 15 18 19 22 23 24 25

ring nodes :

1 2 3 4 5 6 7 8 9 10 11

chain bonds :

1-19 5-18 18-22 18-23 19-24 19-25

ring bonds :

1-2 1-5 1-11 2-3 2-11 3-4 3-11 4-5 4-11 5-11 6-7 6-10 6-11 7-8 7-11 8-9 8-11 9-10  
9-11 10-11

exact/norm bonds :

1-2 1-5 1-11 2-3 2-11 3-4 3-11 4-5 4-11 5-11 6-7 6-10 6-11 7-8 7-11 8-9 8-11 9-10  
9-11 10-11 18-22 18-23 19-24 19-25

exact bonds :

1-19 5-18

G1:H,CH3,Et,n-Pr,i-Pr,n-Bu,i-Bu,s-Bu,t-Bu

G2:H,Cl,Br

Connectivity :

18:1 M minimum RC ring/chai19:1 M minimum RC ring/chain

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:CLASS6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom 13:CLASS  
14:CLASS

15:CLASS17:CLASS18:CLASS19:CLASS22:CLASS23:CLASS24:CLASS25:CLASS

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FILE 'REGISTRY' ENTERED AT 18:50:15 ON 30 JUN 2007  
L1 STRUCTURE uploaded

=> d l1  
L1 HAS NO ANSWERS  
L1 STR

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

Structure attributes must be viewed using STN Express query preparation.

=> s l1 full  
FULL SEARCH INITIATED 18:50:54 FILE 'REGISTRY'  
FULL SCREEN SEARCH COMPLETED - 13499 TO ITERATE

100.0% PROCESSED 13499 ITERATIONS 2 ANSWERS  
SEARCH TIME: 00.00.01

L2 2 SEA SSS FUL L1

=> fil caplus  
COST IN U.S. DOLLARS SINCE FILE TOTAL  
ENTRY SESSION  
FULL ESTIMATED COST 172.10 172.31

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FILE LAST UPDATED: 29 Jun 2007 (20070629/ED)

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=> s 12  
L3 1 L2

=> d his

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L2 2 S L1 FULL

FILE 'CAPLUS' ENTERED AT 18:50:59 ON 30 JUN 2007  
L3 1 S L2

=> d bib abs

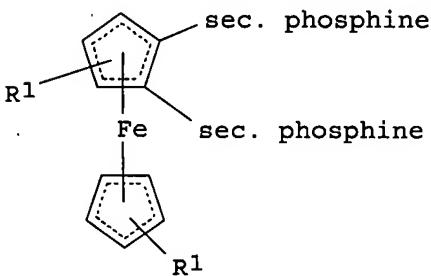
L3 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2005:547608 CAPLUS  
DN 143:78304  
TI Preparation of ferrocenyl-1,2-diphosphines and their metal complexes as catalysts for asymmetric synthesis  
IN Lotz, Matthias; Kesselgruber, Martin; Thommen, Marc; Pugin, Benoit  
PA Solvias A.-G., Switz.  
SO PCT Int. Appl., 65 pp.  
CODEN: PIXXD2

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005056568	A1	20050623	WO 2004-EP53389	20041210
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	CA 2548928	A1	20050623	CA 2004-2548928	20041210
	EP 1692151	A1	20060823	EP 2004-820078	20041210
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS				
	CN 1894268	A	20070110	CN 2004-80037022	20041210
	JP 2007516971	T	20070628	JP 2006-543552	20041210
	US 2007142655	A1	20070621	US 2006-582406	20060609
PRAI	CH 2003-2131	A	20031212		
	WO 2004-EP53389	W	20041210		
OS	CASREACT 143:78304; MARPAT 143:78304				
GI					

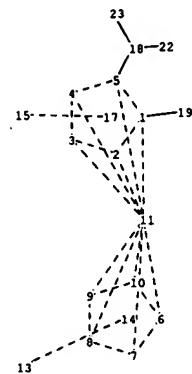
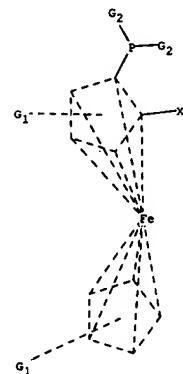


I

AB The invention relates to preparation of compds., I (R1 = H, C1-4 alkyl, and at least one sec. phosphine depicts an unsubstituted or substituted cyclic phosphine group, or phosphonium salts thereof having one or two monovalent anions or a divalent anion), provided in the form of racemic compds., mixts. of diastereomers or essentially pure diastereomers. I can be

obtained by a novel method and are valuable ligands for catalytically active metal complexes in asym. synthesis.

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT



chain nodes :

13 15 18 19 22 23

ring nodes :

1 2 3 4 5 6 7 8 9 10 11

chain bonds :

1-19 5-18 18-22 18-23

ring bonds :

1-2 1-5 1-11 2-3 2-11 3-4 3-11 4-5 4-11 5-11 6-7 6-10 6-11 7-8 7-11 8-9 8-11 9-10  
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exact/norm bonds :

1-2 1-5 1-11 2-3 2-11 3-4 3-11 4-5 4-11 5-11 6-7 6-10 6-11 7-8 7-11 8-9 8-11 9-10  
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1-19 5-18

G1:H,CH3,Et,n-Pr,i-Pr,n-Bu,i-Bu,s-Bu,t-Bu

G2:H,Cl,Br

Connectivity :

18:1 M minimum RC ring/chain

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:CLASS6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom 13:CLASS  
14:CLASS

15:CLASS17:CLASS18:CLASS19:CLASS22:CLASS23:CLASS

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L1 HAS NO ANSWERS  
L1 STR

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L2 O S L1 FULL

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L3 HAS NO ANSWERS  
L3 STR

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=> s 14  
L5 2 L4

=> d 1-2 bib abs

L5 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2005:547608 CAPLUS  
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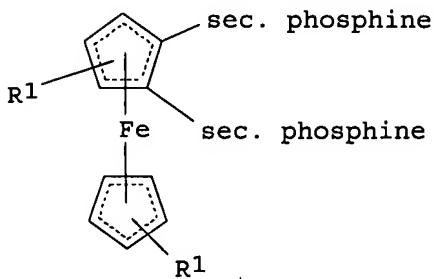
CODEN: PIXXD2

DT Patent

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FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005056568	A1	20050623	WO 2004-EP53389	20041210
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PRAI	CH 2003-2131	A	20031212		
	WO 2004-EP53389	W	20041210		
OS	CASREACT 143:78304; MARPAT 143:78304				
GI					



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RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2005:547607 CAPLUS

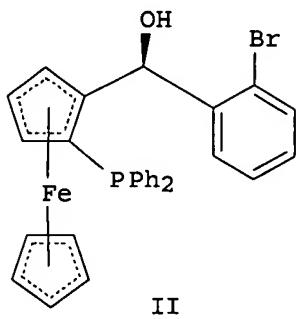
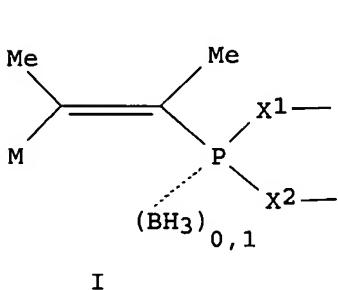
DN 143:78303

TI Method for producing ortho-metatalated and ortho-substituted aromatic compounds

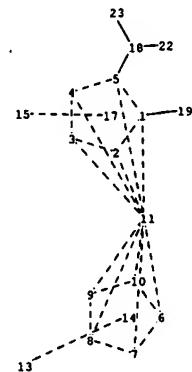
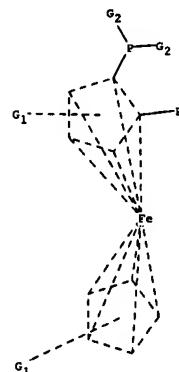
IN Pfaltz, Andreas; Lotz, Matthias; Schoenleber, Marc; Pugin, Benoit; Kesselgruber, Martin; Thommen, Marc

PA Solvias A.-G., Switz.  
 SO PCT Int. Appl., 98 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA German  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI,	WO 2005056566	A2	20050623	WO 2004-EP53388	20041210
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	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS				
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	JP 2007513923	T	20070531	JP 2006-543551	20041210
	US 2007149796	A1	20070628	US 2006-582404	20060609
PRAI	CH 2003-2134	A	20031212		
	WO 2004-EP53388	W	20041210		
OS	CASREACT 143:78303; MARPAT 143:78303				
GI					



AB The invention relates to compds. having a structural element I in an aromatic hydrocarbon ring, wherein: M = Li, MgX<sub>3</sub>, (C<sub>1-18</sub> alkyl)<sub>3</sub>Sn, ZnX<sub>3</sub>, B(OC<sub>1-4</sub> alkyl)<sub>2</sub>; X<sub>1</sub>, X<sub>2</sub> = independent of one another, represent O, N, C-bound hydrocarbon radicals; heterohydrocarbon radicals are bound to the free bonds of the O and N atoms; group C:C, together with C atoms, forms a hydrocarbon aromatic compound and represents X<sub>3</sub> Cl, Br, I. The inventive compds. are easily obtained by directly substituting the hydrogen in the ortho position to the P atom with metalation reagents. The metal atoms can then be substituted by a reactive electrophilic compound. The group P(X<sub>1</sub>)(X<sub>2</sub>)---(BH<sub>3</sub>)<sub>0,1</sub> can then be converted into a secondary phosphine group. The inventive method enables the production of monophosphines and diphosphines even on a large scale(coating), which are valuable ligands for metal complexes serving as catalysts for, e.g. enantioselective hydrogenations. Thus, preparation of title compound is described in several steps starting from ferrocene.



chain nodes :

13 15 18 19 22 23

ring nodes :

1 2 3 4 5 6 7 8 9 10 11

chain bonds :

1-19 5-18 18-22 18-23

ring bonds :

1-2 1-5 1-11 2-3 2-11 3-4 3-11 4-5 4-11 5-11 6-7 6-10 6-11 7-8 7-11 8-9 8-11 9-10  
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exact/norm bonds :

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9-11 10-11 18-22 18-23

exact bonds :

1-19 5-18

G1:H,CH3,Et,n-Pr,i-Pr,n-Bu,i-Bu,s-Bu,t-Bu

G2:H,Cl,Br

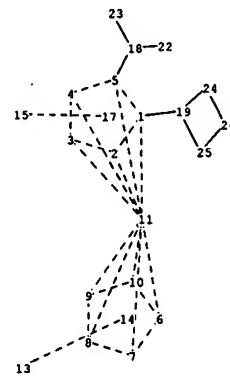
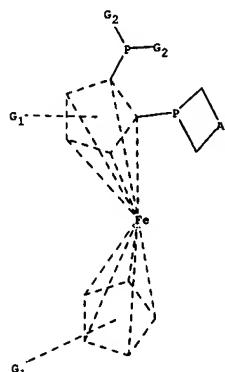
Connectivity :

18:1 M minimum RC ring/chain

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:CLASS6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom 13:CLASS  
14:CLASS

15:CLASS17:CLASS18:CLASS19:CLASS22:CLASS23:CLASS



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13 15 18 22 23

ring nodes :

1 2 3 4 5 6 7 8 9 10 11 19 24 25 26

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9-11 10-11 18-22 18-23 19-24 19-25 24-26 25-26

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1:Atom 2:Atom 3:Atom 4:Atom 5:CLASS6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom 13:CLASS  
14:CLASS

15:CLASS17:CLASS18:CLASS19:CLASS22:CLASS23:CLASS24:Atom 25:Atom 26:Atom